

AMENDMENTS TO THE SPECIFICATION:

In the specification, several paragraphs have been amended to correct minor editorial problems. No new matter has been added to these paragraphs.

✓
Please amend the Abstract to read as follows:

Molded articles or substrates having an in-mold coating thereon are disclosed. The in-mold coated substrates are produced by a method wherein the flow of the in-mold composition onto the substrate can be selectively controlled. The molded articles can be preferentially coated in desired or predetermined areas with in-mold coating compositions by controlling the thickness or depth of various sections of the substrate.

~~In a further embodiment, a molded article or substrate is provided with an in-mold coating containment flange to substantially contain the in-mold coating within the mold cavity and on the desired area of a part before the coating has been cured.~~

A1 ~~In yet another embodiment of the present invention, a molded article or substrate is provided with at least runner section or preferred flow channel to promote in-mold coating flow over the surface of a substrate.~~

~~A further embodiment of the present invention provides a molded article with an area of increased relative thickness at the location of in-mold coating injection to encourage or promote in-mold coating flow.~~

Please amend the paragraph which starts on line 1 of page 8 to read as follows:

A2
FIG. ~~[[9]]~~ 10 is a front elevation view of a ~~substantially flat~~ molded plaque with a substantially flat show surface. ~~The location of runner sections and thickness are shown for the benefit of the viewer.~~

Please amend the paragraph which starts on line 4 of page 8 to read as follows:

A3
FIG. ~~[[10]]~~ 9 is a ~~front~~ perspective view, not shown to scale, of a molded substrate plaque with areas of varying thickness illustrated.

Please amend the paragraph which starts on line 3 of page 10 to read as follows:

A4
In FIG. 2, the mold halves 20 and 30 are shown in a closed position, abutted or mated along parting line 42 at face surfaces 24 and 34. As illustrated, the mold cavity is shown in cross section. It is readily understood by those skilled in the art that the design of the cavity can vary greatly in size and shape according to the end product to be molded. The mold cavity generally has a first surface 44 on the ~~first~~ second mold half 30, upon which a show surface of an article will be formed, and a corresponding back side or opposite second surface 46 on the ~~second~~ first mold half 20. The mold cavity also contains separate orifices to allow the first and second composition injectors to inject their respective compositions thereinto. The location of the injectors and injection orifices thereof can vary from apparatus to apparatus, and part to part, and can be based on factors such as efficiency, functionality, or desire of the mold designer.

Please amend the paragraph which starts on line 3 of page 12 to read as follows:

A5
It has been found that a surface of the substrate can be selectively coated with in-mold coatings in predetermined areas by controlling or modifying the thickness or depth of the substrate. When utilized in the present invention, thickness or depth is

A5
cont-

defined as a distance, girth, or dimension from one surface to the opposite surface of the substrate. The method of the present invention is generally concerned with the depth between two surfaces, the first being a surface to which an in-mold mold coating is selectively directed or applied, commonly referred to as a show or appearance surface, and the back surface that is substantially the opposite side of the substrate. The in-mold coating may but does not necessarily cover the entire show surface. For example, in FIG. 3 thickness refers to the distance from show surface 82 of a substrate to the backside or opposite surface ~~[[84]]~~ 108. As shown in FIG. 3, the thickness between the show surface and back side of the substrate can vary.

Please amend the paragraph which starts on line 11 of page 13 to read as follows:

A6

~~In-mold coatings can be applied to a substrate in numerous ways well known to those of ordinary skill in the art.~~ The present invention is not meant to be limited to the following example. As shown in FIG. 2, an in-mold coating or second composition injector 60 (FIG. 1) has a nozzle 62 which is located on the molding apparatus in a suitable location such as on mold half 30. A first quantity of a first composition ~~[[80]]~~ is injected into a mold cavity to a desired predetermined level, forming a substrate, work piece, or article, such as plaque 100 shown in the views of FIGS. 3-5. As shown in FIG. 3, the substrate has at least a show surface 82 and a back side ~~[[84]]~~ 108. An in-mold coating composition (shown as 90 in FIGS. 7 and 8) is then injected into the mold cavity from in-mold coating injector 60. The in-mold coating is injected through at least one nozzle 62 onto the show surface side of the substrate at a location such as 104 on tab ~~[[102]]~~ 110 as shown in FIG. 4.

Please amend the paragraph which starts on line 17 of page 16 to read as follows:

A7
In ~~[[one]]~~ another embodiment of the present invention, a substrate is provided with an area or section of increased thickness around the point or location where the in-mold coating is injected onto the substrate in order to promote in-mold coating flow. By increased thickness, it is to be understood that the thickness of the substrate around the in-mold coating injection location is greater than at least one other area or section of the substrate. As shown in FIG. 5, plaque 100 is shown with ~~[[a]]~~ tab ~~[[area]]~~ 110 at a location of in-mold coating injection. The tab area thickness can be varied to enhance channeling of the in-mold coating. Tab ~~section 104~~ 110 in FIG. 4 includes a thin section or in-mold coating containment tab flange 102 which prevents the in-mold coating from flowing out of the mold cavity. The concept of the containment flange will be further explained hereinbelow. The relatively thick tab area promotes in-mold coating flow from the in-mold coating nozzle onto the show surface ~~[[80]]~~ 82 of the substrate. The in-mold coating will tend to avoid tab or other substrate sections of minimal or lesser thickness.

Please amend the paragraph which starts on line 3 of page 21 to read as follows:

A8
The process of the present invention utilizes in-mold coatings, many of which are available commercially. Such coatings include GenGlaze® and Stylecoat®, acrylic based appearance in-mold coatings available from Omnova Solutions Inc. of Fairlawn, Ohio, as well as others. These and other coatings are well known to the art. One ~~[[S]]~~ suitable in-mold coating ~~[[s are]]~~ (an acrylic coating) is found in U.S. Pat. No. 5,777,053, herein incorporated by reference. The main advantage of acrylic coatings is the high degree of resistance to thermal and photooxidation and to hydrolysis, giving coatings that have superior color retention, resistance to embrittlement and exterior durability. Low-molecular weight acrylic resins having an average functionality of two to three and containing few molecules that are nonfunctional or only monofunctional, are useful in the present invention. Epoxy resins are also useful as in-mold coatings in the present

As
cont.

invention. A principal use of epoxy resins is as a component in two-package primer coatings. One part contains the epoxy resin and the other part contains a polyfunctional amine. Amine-terminated polyamides, sometimes called amido-amines; are widely used. A preferred acrylic resin is an epoxy-based oligomer having at least two acrylate groups and at least one copolymerizable ethylenically unsaturated monomer, and at least one copolymerizable monoethylenically unsaturated compounds having a --CO--, group and a --NH₂--, NH, and or --OH-- group.
